

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

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Eiju KOMURO

Application No.: New U.S. National Stage of  
PCT/GB01/02293

Filed: January 17, 2002

Docket No.: 111677

For: IMPROVEMENTS TO FILTERS

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 3-15 as follows:

3. (Amended) An electric filter as described in claim 1, wherein the areas of the electrodes for the FBARs linked in series are adjusted so that their series resonance frequency is the same as the parallel resonance frequency of the FBARs linked in parallel.
4. (Amended) An electric filter as described in claim 1, wherein the piezoelectric material is zinc oxide.
5. (Amended) An electric filter as described in claim 1, wherein the piezoelectric material is substantially comprised of lead titanate zirconate.

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6. (Amended) An electric filter as described in claim 1, wherein the piezoelectric material is aluminum nitride.

7. (Amended) An electric filter as described in claim 1, wherein the piezoelectric material is substantially comprised of lead scandium tantalum oxide.

8. (Amended) An electric filter as described in claim 1, wherein the piezoelectric material is substantially comprised of bismuth sodium titanium oxide.

9. (Amended) An electric filter as described in claim 1, wherein the metal electrodes comprise gold.

10. (Amended) An electric filter as described in claim 1, wherein the metal electrodes comprise aluminum.

11. (Amended) An electric filter as described in claim 1, wherein the metal electrodes comprise platinum.

12. (Amended) An electric filter as described in claim 1, wherein 2 FBARs are linked in series and 2 FBARs are linked in parallel.

13. (Amended) An electric filter as described in claim 1, whereon 3 FBARs are linked in series and 3 FBARs are linked in parallel.

14. (Amended) An electric filter according to claim 1, wherein the piezoelectric material of FBARs in parallel is thicker than that of FBARs in series.

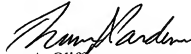
15. (Amended) An electric filter according to claim 1, wherein the area of electrodes of FBARs in parallel is greater than that of FBARs in series.

#### REMARKS

Claims 1-17 are pending. By this Preliminary Amendment, claims 3-15 are amended to remove multiple dependencies. Prompt and favorable examination on the merits is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. 1.121(c)(1)(ii)).

Respectfully submitted,



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Attached: Appendix  
Date: January 17, 2002

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## Changes to Claims:

The following are marked-up versions of the amended claims:

3. (Amended) An electric filter as described in claim 1 ~~or claim 2~~, wherein the areas of the electrodes for the FBARs linked in series are adjusted so that their series resonance frequency is the same as the parallel resonance frequency of the FBARs linked in parallel.
4. (Amended) An electric filter as described in claim 1 ~~any preceding claim~~, wherein the piezoelectric material is zinc oxide.
5. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 3~~, wherein the piezoelectric material is substantially comprised of lead titanate zirconate.
6. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 3~~, wherein the piezoelectric material is aluminum nitride.
7. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 3~~, wherein the piezoelectric material is substantially comprised of lead scandium tantalum oxide.
8. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 3~~, wherein the piezoelectric material is substantially comprised of bismuth sodium titanium oxide.
9. (Amended) An electric filter as described in claim 1 ~~any preceding claims~~, wherein the metal electrodes comprise gold.
10. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 8~~, wherein the metal electrodes comprise aluminum.
11. (Amended) An electric filter as described in claim 1 ~~any of claims 1 to 8~~, wherein the metal electrodes comprise platinum.

12. (Amended) An electric filter as described in claim 1 ~~any preceding claims~~, wherein 2 FBARs are linked in series and 2 FBARs are linked in parallel.
13. (Amended) An electric filter as described in claim 1 ~~any one of claims 1 to 11~~, whereon 3 FBARs are linked in series and 3 FBARs are linked in parallel.
14. (Amended) An electric filter according to claim 1 ~~any preceding claim~~, wherein the piezoelectric material of FBARs in parallel is thicker than that of FBARs in series.
15. (Amended) An electric filter according to claim 1 ~~any preceding claim~~, wherein the area of electrodes of FBARs in parallel is greater than that of FBARs in series.